```c
/*******************************************************

                              Online C Compiler.
                Code, Compile, Run and Debug C progra
Write your code in this editor and press "Run" button

*******************************************************

#include <stdio.h>
#include <stdlib.h>

struct btnode
{
    int value;
    struct btnode *l;
    struct btnode *r;
}*root = NULL, *temp = NULL, *t2, *t1;


void insert();

void inorder(struct btnode *t);
void create();
void search(struct btnode *t);

void preorder(struct btnode *t);
void postorder(struct btnode *t);

int flag = 1;

void main()
{
    int ch;

   printf("--MENU--");
    printf("\n1- Insert an element into tree\n");
```

```
    printf("--MENU--");
     printf("\n1- Insert an element into tree\n");

     printf("2- Inorder Traversal\n");
     printf("3 - Preorder Traversal\n");
     printf("4- Postorder Traversal\n");
     printf("5- Exit\n");
     while(1)
     {
          printf("\nEnter your choice from 1-5: ");
          scanf("%d", &ch);
          switch (ch)
          {
          case 1:
               insert();
               break;
          case 2:
               inorder(root);
               break;
          case 3:
               preorder(root);
               break;
          case 4:
               postorder(root);
               break;
          case 5:
               exit(0);
          default :
               printf(" Please enter correct choice  ");
               break;
          }
     }
}


void insert()
{
```

```
70  void insert()
71  {
72      create();
73      if (root == NULL)
74          root = temp;
75          else
76          search(root);
77  }
78
79
80  void create()
81  {
82      int data;
83
84      printf("Enter data of node to be inserted : ");
85      scanf("%d", &data);
86      temp = (struct btnode *)malloc(1*sizeof(struct btnode));
87      temp->value = data;
88      temp->l = temp->r = NULL;
89  }
90   void search(struct btnode *t)
91  {
92      if ((temp->value > t->value) && (t->r != NULL))
93          search(t->r);
94      else if ((temp->value > t->value) && (t->r == NULL))
95          t->r = temp;
96      else if ((temp->value < t->value) && (t->l != NULL))
97          search(t->l);
98      else if ((temp->value < t->value) && (t->l == NULL))
99          t->l = temp;
100 }
101
102
103 void inorder(struct btnode *t)
104 {
105     if (root == NULL)
106     {
107         printf("No elements in tree to display");
```

```
        printf("No elements in tree to display");
        return;
    }
    if (t->l != NULL)
        inorder(t->l);
    printf("%d _ ", t->value);
    if (t->r != NULL)
        inorder(t->r);
}


void preorder(struct btnode *t)
{
    if (root == NULL)
    {
        printf("No elements in tree to display");
        return;
    }
    printf("%d _ ", t->value);
    if (t->l != NULL)
        preorder(t->l);
    if (t->r != NULL)
        preorder(t->r);
}


void postorder(struct btnode *t)
{
    if (root == NULL)
    {
        printf("No elements in  tree to display ");
        return;
    }
    if (t->l != NULL)
        postorder(t->l);
    if (t->r != NULL)
        postorder(t->r);
```

```
    }
    if (t->l != NULL)
        inorder(t->l);
    printf("%d _ ", t->value);
    if (t->r != NULL)
        inorder(t->r);
}


void preorder(struct btnode *t)
{
    if (root == NULL)
    {
        printf("No elements in tree to display");
        return;
    }
    printf("%d _ ", t->value);
    if (t->l != NULL)
        preorder(t->l);
    if (t->r != NULL)
        preorder(t->r);
}


void postorder(struct btnode *t)
{
    if (root == NULL)
    {
        printf("No elements in  tree to display ");
        return;
    }
    if (t->l != NULL)
        postorder(t->l);
    if (t->r != NULL)
        postorder(t->r);
    printf("%d _ ", t->value);
}
```

```
--MENU--
1- Insert an element into tree
2- Inorder Traversal
3 - Preorder Traversal
4- Postorder Traversal
5- Exit

Enter your choice from 1-5: 1
Enter data of node to be inserted : 34

Enter your choice from 1-5: 1
Enter data of node to be inserted : 56

Enter your choice from 1-5: 1
Enter data of node to be inserted : 78

Enter your choice from 1-5: 1
Enter data of node to be inserted : 80

Enter your choice from 1-5: 1
Enter data of node to be inserted : 89

Enter your choice from 1-5: 2
34 _ 56 _ 78 _ 80 _ 89 _
Enter your choice from 1-5: 3
34 _ 56 _ 78 _ 80 _ 89 _
Enter your choice from 1-5: 4
89 _ 80 _ 78 _ 56 _ 34 _
```